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Atty. Anthony R. Brighton
Atty. Charles Reidy
Martin, Magnuson, McCarthy and Kenney
101 Merrimac Street
Boston MA 02114-4716

15 April 2006

Re: Pernokas v Paster MD

I have been asked to render an opinion in the matter listed above. In response to this request, I have reviewed the following materials:

Materials Reviewed

- Medical Record Review
 - Medical records of Dr. Barrie Paster
 - Records of Dr. Putnam Breed
 - Records of Dr. Stephen Chastain
 - Records of Dr. Paul Spieler
 - Medical Records of Lahey Clinic
 - Medical records of Holy Family Hospital
 - Records of Anna Jacques Hospital
 - Plaintiff Experts opinions of Dr. G. Bianco
 - Deposition of Arthur Pernokas
 - Formal letter to Atty. Brighton regarding specific aspects of pathology review
- Plaintiff offer of proof
- Review of supporting literature statements that deal with standard of care and causation in the diagnosis of right sided colorectal lesions
- Deposition of Dr. Paster
- Review of abdominal CT scan of Mr. Pernokas
- Review of pathology of outside pathologist, Dr. Bergeron
- Review of Opinions of Drs. Browne (oncologist) and Winickoff, PCP
- Review of Deposition of Dianne Pernokas
- Review of Diane Pernokas's answers to interrogatories
- Review of Arthur Pernokas's answers to interrogatories
- 2005 and 2006 Medical Records of Dr. Chastain, including some correspondence from Dr. Niccolini

- Review of pathology of colorectal cancer resected specimen with Dr. Bergeron

This letter sets forth a complete statement of all of my expressed opinions and the basis and reasons for these opinions and for forming these opinions. The opinions are expressed and held to a reasonable degree of medical certainty or probability. The data and information that was considered in forming these opinions include the following:

- practicing medical oncology for the past 29 years, which includes the care and management of patients with colorectal cancer;
- the medical writings of myself in colorectal cancer and those of others;
- the constant review of ongoing medical literature and attendance of medical seminars relating to the understanding of the molecular biology and genetics of cancer, cancer formation, the process of cancer metastases;
- practicing as an oncologist providing expertise to patients in the diagnosis, staging and treatment of cancer, including colorectal cancer
- I have included with this opinion letter a recent copy of my curriculum vitae which lists all of the publications by me within the preceding ten years

My qualifications as an expert are included in my attached Curriculum Vitae. My fee for reviewing records and writing reports outlining my opinions is \$475.00 per hour; for deposition and trial testimony, \$475.00/hour. To the best of my knowledge, within the last four years, I have testified in court appearances or deposition 5 times. These include the case of Witt vs. Buonomono; Altschuler vs. McCarthy; Bhambi vs. Piper; Kaiser v Bresnahan; and Rubin v Gold.

Relevant Medical History in Case of Pernokas vs. Paster MD

11 September 1998: Mr. Arthur Pernokas, DoB 15 August 1956 (the patient), visits Dr Paster complaining of intermittent bright red blood per rectum for the past two weeks; denies mucus; pain or diarrhea. Rectal exam shows an internal hemorrhoid, and no palpable masses. Dr. Paster prescribes Anusol suppositories and schedules patient for flexible sigmoidoscopy.

14 October 1998: flexible sigmoidoscopy to 55 cm shows multiple "tics" at 40 to 55 cc, some with stool; no polyps or erosions; some prominent vessels at 20 cm; small breaks in mucosa at 5 cm; attributes that as an explanation of the rectal bleeding; an internal hemorrhoid is seen at 7 O'Clock; diagnosis of internal hemorrhoids and diverticulosis is made. A high fiber diet and fluids are prescribed.

8 December 1999: patient noted to be on Lopid (for hypercholesterolemia); and has complaints of abdominal distension and feeling bloated with gas; relieved by bowel movement or belching; heavy beer intake noted; abdominal exam is soft and non tender;

no palpable masses; no history of any rectal bleeding noted; a liver function profile is drawn and is normal.

6 January 2000: phone call note: abdominal pain persists; Dr. Paster changes Lopid to Pravachol and stresses the need for decreasing alcohol intake; there is a subsequent note (? date) that pain is still there but less intense.

8 June 2001: visit with Dr. Paster notes no complaints of abdominal pain, rectal bleeding or other gastrointestinal complaints.

14 March 2002: Patient sees Physician Assistant Duff with complaint of increasing abdominal pain over the last 5-6 days, crampy, wave like and in the epigastric area; decreased appetite; no vomiting; no change in bowels; states that pain was intermittent in the past, but never so severe; Ms Duff's physical exam shows point tender(?ness) in Right Upper Quadrant; point tenderness Right Lower Quadrant with some rebound tenderness as well; no guarding; patient referred to Dr. Breed and stat CBC is obtained; a stool occult blood is positive.

14 March 2002: There is a note by Ms. Duff that patient was seen by Dr. Breed; a mass in the ascending colon with nodal involvement on CT was noted; CBC showed Hemoglobin 8.6 and Hematocrit of 27.2; CEA 21.5.

14 March 2002: Office visit by Dr. Breed; history obtained of epigastric pain and gas for three weeks; upper gastrointestinal symptoms 1 year (?) ago; lost a few pounds; not eating well; alcohol use (beer); negative review of symptoms; on physical exam; tender right mid abdomen with ? mass in ascending colon; right abdominal pain. ? Right colon cancer.

14 March 2002: CT of abdomen and pelvis: (apparently report has Dr. Paster listed as physician on request;) Large soft tissue mass with irregular borders in the ascending colon from the ileocecal valve nearly up to the hepatic flexure, measures 7-8 cm; borders are lobulated; decrease in size of intraluminal lumen; several lymph nodes adjacent to the mass in ascending colon; -- compatible with colon cancer with extension through serosa and into several lymph nodes; liver normal; celiac lymph node near portal vein and inferior vena cava measures 1 cm; Dr. Breed notified of findings.

19 March 2002: operative summary from Anna Jaques Hospital ; patient underwent right ileocelectomy with stapled anastomosis; at surgery, a large mass in the right colon was found with adherent omentum; penetration of mass through all layers of bowel wall into surrounding tissue; no metastatic implants in peritoneum; anastomosis of terminal ileum to proximal transverse colon performed

Pathology: read at Anna Jaques Hospital: large fungating tumor at ileocecal valve 5 x 10.5 cm, invasion through bowel wall into pericolic adipose tissue; 2 cm stump of ileum present; tumor is 6 cm from distal surgical margin and 3 cm

from proximal surgical margin; Metastatic tumor in 3 of 14 pericolic lymph nodes; (size or extracapsular extension not noted;) resection margins showed no tumor; Tumor was invasive moderately differentiated adenocarcinoma; stage III (T3N1Mx);

I have personally reviewed the pathology slides with Dr. Bergeron, a pathologist identified by Atty. Brighton. While I am not an expert in the pathological interpretation of colon cancers or a pathologist, I put forth the findings of my pathology review with Dr. Bergeron. The primary lesion was a moderately differentiated adenocarcinoma; the size and anatomic location of the lesion was identified in the original pathology report. After detailed review, there was no vascular invasion of the primary cancer into vascular spaces within the tumor mass. There were areas of mucinous components within the mass, and there was evidence of pericolic adipose involvement with tumor. There was evidence of denudation of the colonic mucosal surface in the areas involved by adenocarcinoma.

There were multiple lymph nodes examined during our review; of these there were three lymph nodes that contained cancer. One node measured approximately 1 cm in overall diameter and was proximate to an involved area of the primary colonic cancer. This node had at least five discrete areas of extranodal extension; according to Dr. Bergeron, the architectural pattern was so called "microglandular". The other two lymph nodes contained either evidence of direct extranodal extension (one node) or suggestion of extranodal extension (one node). These latter two nodes contained a mucinous component. Dr. Bergeron measured these nodes to be approximately 0.5 cm in diameter.

1 April 2002: Oncology opinion by Dr. Spieler; discussion of chemotherapy; CEA 3.9; Chemotherapy with FU leucovorin selected as treatment.

2 February 2003: CT scan of abdomen: no significant pathology of the abdomen is seen

2 February 2003: CT scan of pelvis w/o contrast: no occult masses; There are some large diverticula on the sigmoid colon with mild sigmoid colon thickening. No adenopathy in the pelvis is seen. Impression: There is some thickening in the sigmoid colon with large diverticula present. This probably represents old inflammation.

26 February 2003: surveillance colonoscopy by Dr. Jackson was negative.

2005: Additional follow up through (provider not identified) through 25 February 2005 shows no evidence of recurrent cancer. There is also a note that patient received radiation therapy, which I cannot confirm in the record.

10 June 2005: Patient undergoes gastroscopy and colonoscopy by Dr. Niccolini “to exclude recurrent or new tumor.” Colonoscopy revealed a small sigmoid polyp at 20 cm which was little. Remainder of the sigmoid colon and rectum was normal. Retroflexion of rectum revealed prominent internal hemorrhoids. Colonoscopy was otherwise negative. In the impression section of the report, it states that random colon biopsies were obtained to check for microscopic colitis.

Comments and Opinions of Dr. Garnick

In formulating this opinion letter, I will pose a series of questions that form the foundation of the plaintiff's allegations; these allegations attributed to Dr. Paster form the basis of plaintiff's claims of medical malpractice and the injury that Mr. Pernokas is alleged to have suffered. In providing this opinion, I will refer to the specifics of the medical record which are also listed above. I will make some general comments relating to cancer biology initially, as these comments are important in forming the scientific and clinical basis of my opinions.

General Comments: Three important facts must be appreciated in the interpretation of the biological and clinical interpretation of colon cancer. The first relates to the detectability of any individual cancer by either physical or other diagnostic means. In general, the size at which an individual cancer mass or “lesion” becomes detectable is thought to be approximately 1 cm in diameter. At this size, accurate estimates suggest that a 1 cm tumor mass contains approximately one billion (ten to the ninth power) cells. This represents approximately 30 doublings of one individual cancer cell, dividing, and those daughter cells then dividing, etc, for thirty cycles or doublings. In general, an untreated cancer will cause the death of the host patient when the cancer has undergone 35-40 doublings. Thus, when even the smallest cancers are detected of approximately 1 cm in size, that cancer has already experienced a significant portion (70-80%) of its individual natural history. The genetic alterations that characterize the cancer and which will govern the cancer's behaviour have already (at the time of “early” detection) been incorporated into the genetic constitution of the tumor. Thus, this fact helps explain the dilemma of physicians' inability to universally cure patients who have small, and “early” detected cancerous lesions – at the time of this early diagnosis, the adverse characteristics that genetically make up the biology of the cancer have already been determined. Thus any actual or theoretical delay in the time of diagnosis is not relevant to the ultimate outcome of the individual patient.

A second important point relates to how long a cancer has been present, at the microscopic or submicroscopic stage, when a clinically, radiographically or endoscopically detectable cancer is diagnosed. As stated above, there are growth characteristics of individual cancer types. Based upon actual observations of cancers which have grown and been measured in patients, and depending upon the individual type of cancer (e.g., from various organs), tumor doubling times range from several weeks to years. Clinically active cancers such as colon cancer, or those which are

diagnosed in a patient's lifetime, are generally considered to have doubling times of approximately 4 months. Thus, when a one centimeter lesion is diagnosed, it is generally thought that the cellular origins of that cancer were present years earlier (i.e., thirty doublings multiplied by 4 months = 120 months (9-10 years). For that one centimeter lesion to go to 2 cm would add an additional 4 months. As illustrated below, if we assume a commonly accepted tumor doubling time of 4 months in the case of Mr. Pernokas, an important fact emerges -- his cancer had been present for years. Lastly, the seeding of cancer cells in the lymph nodes (or other organs) occurs very early in the development of the cancer, well before the primary cancer is diagnosable.

A third point supporting the above opinion should be considered. The issue addresses when in the clinical history metastatic cells are present in the patient. Using sophisticated technological advances, single cancerous cells can now be identified in the bone marrow of patients with various solid tumors. Thus, the process of metastasis, once thought to occur late in the natural history of an individual cancer, has now been credibly challenged. Rather, the cells which have the biological capabilities to metastasize do so early in the development of the cancer, well before the primary cancer is detectable by clinical means.

1. What were Mr. Pernokas's cancer and non-cancer diagnoses?

Mr. Pernokas had an established diagnosis of invasive, moderately differentiated adenocarcinoma, through the muscularis propria and into pericolic fat; three of fourteen lymph nodes positive for metastatic cancer; lesion was 10.5 cm x 5.0 cm; 3 cm from nearest margin, which was the ileum; it was not metastatic to the omentum or liver (T3N1M0, Modified Astler Collier C2/C3/ (Dukes) Stage C Cancer, group stage IIIB).

The patient also carried a variety of other diagnoses, including loss of integrity of rectal mucosal surface, internal hemorrhoids, diverticulosis, hypercholesterolemia and heavy alcohol intake. The internal hemorrhoids, diverticulosis and loss of integrity in the rectal mucosa were all completely appropriate diagnoses to account for the bright red blood per rectum that was present in late 1998.

2. Was the cancer that was diagnosed in March 2002 diagnosable in September 1998?

The cancer was not macroscopically diagnosable in September 1998. I base this opinion on several factors. The rectal bleeding that the patient presented to Dr. Paster is not compatible with a right sided colon lesion. Rather, the rectal bleeding that the patient complained of to Dr. Paster was due to left sided bleeding and readily explained by the rectal mucosal abnormality and internal hemorrhoid. Dr. Paster provided appropriate care for Mr. Pernokas in the September-October 1998 time frame by performing a flexible sigmoidoscopy and establishing a totally appropriate

diagnosis of the source of the bleeding. Dr. Paster even states that he had found the source of the bleeding in his sigmoidoscopy note. (I thus respectfully disagree with Plaintiff's Winickoff assertion listed above that states that a source of bleeding was not found). Colonic lesions from the right ascending colon more often than not do not present with red rectal bleeding, but rather a change in the color of the stool. It is medically and biologically (based upon the growth characteristics that I will enumerate on shortly) inconceivable that the bleeding that the patient complained of in 1998 could have come from a lesion in the right side of the colon in 1998. On a microscopic basis (subclinical and non-diagnosable by any available means), it was present in the cecum, ascending colon and lymph nodes, based upon known growth characteristics of colon cancer and the timing of developing metastatic lesions from epithelial cancers.

Moreover, the abdominal pain that Mr. Pernokas was experiencing in 1999 and early 2000 was not due to the colon cancer. The colonic lesion was sub-macroscopic (i.e. microscopic) for which there is no evidence of it causing obstructive symptoms in this time frame. There is no complaint of abdominal pain in 2001. The histories that both Ms. Duff and Dr. Breed obtained in 2002 are quantitatively and qualitatively different than that noted in the 1998-1999 time frame. The chronicity of abdominal pain that brought the patient to medical attention in the March 2002 time frame chronology was noted by Ms. Duff to be 5-6 days in duration, and three weeks by Dr. Breed – not symptoms that had been persisting for the past 2-4 years.

3. Was the cancer that was diagnosed in March 2002 diagnosable in January 2000?
No. This opinion is based upon the growth characteristics of colon cancers. In the January 2000 time frame, the colonic primary lesion would have been below the detectability of the colonoscope.
4. Hypothetically, when was the cancer potentially diagnosable? And what would the stage of the cancer been at that time?

Based upon the review of the record, including the findings at CT scan, operation, all of which occurred in the March 2002 time frame, my opinion is this cancer would have been theoretically diagnosable in the mid-to-late 2001 time frame. Utilizing the TNM classification the cancer would have been staged as a T1, T2 or T3 N1M0, Stage C in mid-to-late 2001 and was diagnosed as T3N1M0 in March 2002.

Most importantly, the patient would have had node positive Dukes C colon cancer at each of those time points. The only factor which may have changed is the T stage, as indicated by T1, T2 or T3 designation. Cancers definitely continue to grow over time; thus the T stage may have been either a lower or similar T stage in the mid-to-late 2001 time frame.

- a. What would the treatment have been if the cancer was diagnosed in 2001?

The treatment would have included surgical resection of the primary cancer by a right ileo-colectomy, similar to that performed in March, 2002. This specimen would have included regional lymph nodes in the surgical specimen as well. The pathology of the lymph nodes would have shown the presence of metastatic adenocarcinoma. It is likely that the diagnostic work up would have also included an evaluation of liver anatomy by abdominal CT scan, which would not have shown the presence of any metastatic deposits in the liver (since the liver was negative in 2002, it would have been negative in 2001). Mr. Pernokas would have undergone systemic chemotherapy with a regimen of chemotherapy drugs comparable to those administered to him in the April 2002 timeframe. Thus, whether the cancer was diagnosed in 2001 or March 2002, the patient would have received the similar type of surgical resection and chemotherapy program, and would have had the same prognosis.

b. What would the prognosis have been if the cancer was diagnosed in 2001?

The prognosis would have been identical to the prognosis in March 2002. The patient, by virtue of the behaviour of his cancer, was destined to have colon cancer that spread to lymph nodes. The genetic make up of his particular cancer was predetermined well before the primary cancer was ever diagnosable. The genetic makeup leading to the behaviour that allowed his cancer metastasize to regional lymph nodes occurred well before the cancer was ever diagnosable in March 2002 or earlier. It is possible that the actual tumor size of the primary cancer may have been smaller in 2001 compared to the lesion found in March 2002. The metastases in the lymph nodes were microscopically present well before the 2001 timeframe; most importantly, the presence of the metastases in the lymph nodes was not a function of the time which elapsed between any hypothetical delay between 2000 and 2002, but rather a direct reflection of the individual biologic behaviour of the cancer itself.

5. Would diagnosis in mid to late 2001 affect the patient's outcome?

As stated in my answer to question 4(b), the genetic make up and biologic behaviour of Mr. Pernokas's cancer was determined well before the cancer was ever clinically diagnosable. The intrinsic characteristics that are associated with the virulence of an individual cancer are determined well before the cancer is ever clinically diagnosable. Thus, the biologic behaviour of a cancer to metastasize requires a coordinated execution of complex cellular signals, determined by the individual genetic make up of the cancer, early on in the development of the cancer. These cellular characteristics and genetics that determine the behaviour of the cancer are expressed well before the cancer achieves a size that would render

it diagnosable. Most importantly, these characteristics of invasiveness and metastatic behaviour develop well before the cancer is clinically diagnosable.

6. Do you agree/disagree with the opinions of plaintiff's expert Dr. Browne?

Opinions of Dr. Browne:

- *The 1998 rectal bleeding was coming from a precancerous polyp or early stage cancer in the right colon*
- *The mass was expected to be in its earliest stages before 1998;*
- *The tumor would have been visualized by colonoscopy as early as 1998 when it was a precancerous polyp or an early stage colon cancer.*
- *A biopsy would have revealed a precancerous polyp which would have been excised without requiring a colectomy or an early stage adenocarcinoma which would have led to surgery but probably not chemotherapy*
- *The longer the cancer went undiagnosed, the larger it became, more likely to metastasize and more treatment was needed and the poorer his prognosis became*
- *5 year survival rates for stage I colon cancer is 93%; Stage II 72-85 %; stage III 40-60% without chemotherapy and 65% after chemotherapy*

I respectfully disagree with the opinions raised in Dr. Browne's expert report. It is inconceivable and biologically impossible that the bright red rectal bleeding was coming from a precancerous polyp or early cancer that was yet to be diagnosed some 43 months later. Such an assumption goes against all peer-reviewed knowledge relating to the growth characteristics of both primary cancers and metastatic lesions. For bright red rectal blood to be emanating from the right side of the colon and to be recognized as such by a patient would require such brisk bleeding that the patient would essentially have to be symptomatic or be experiencing such significant bleeding (nearing exsanguination) if indeed red rectal blood is coming from the right side of the colon. Or, it would have to be emanating from such a large lesion that would have to be symptomatic. Right sided colonic lesions are most commonly associated with bleeding, but the bleeding does not present as bright red bleeding (as perceived by the patient) and blood loss usually occurs without a change in appearance of the stool. By the time the blood from a right sided lesion gets evacuated per rectum, the blood pigments and other constituents have been digested and appear as a color change toward black or more commonly, with no changes at all.

Moreover, based upon known growth characteristics of colon cancer primaries, and knowing and extrapolating back from March 2002, the cancer was not diagnosable by any clinically available means in 1998, and could not have been of

sufficient size to have resulted in noticeable bleeding by the patient in 1998 or in the abdominal symptoms noted shortly thereafter.

Had a colonoscopy been performed in 1998, it is more likely that the cancer would **NOT** have been visible on colonoscopy. Even if a colonoscopy were to be performed in 1998, Mr. Pernokas, by virtue of his complaining of bright red rectal bleeding no longer falls into the category of being a "screened" patient. A screening procedure, by definition, is intended to be performed on completely asymptomatic patients with no signs or symptoms of the organ being evaluated. While the routine use of annual fecal blood testing alone or in combination with other procedures, such as colonoscopy, has been advocated by some as screening procedures, these are recent recommendations and apply to asymptomatic patients. Mr. Pernokas was not an asymptomatic patient for screening (having had complaints of rectal bleeding that was appropriately evaluated diagnostically by the flexible sigmoidoscopy) and hence all of the so-called "screening" statistics do not apply to him.

Moreover, the patient's long standing ingestion of large amounts of beer and other medicines provides the best explanation for the abdominal pain that was reported in 1999 and early 2000. Those complaints seem to be distinct from the complaints expressed to Dr. Breed and Ms. Duff in March 2002. There were, to my reading of the records, no complaints of abdominal pain to Dr. Paster in 2001.

The presentation of the abdominal complaints, physical examination and blood counts in March 2002 is completely compatible with a right sided colonic lesion. These complaints and findings on physical examination were completely different than the complaints described in the record in 1998-2000.

I also continue to respectfully disagree with Dr. Browne's opinions related to her opinion that the longer the cancer went undiagnosed, the larger it became, more likely to metastasize and more treatment was needed and the poorer his prognosis became. While I agree that the primary cancer can continue to grow over time, its likelihood to metastasize is not a function of the time of diagnosis or hypothetical diagnosis, but rather relates to the underlying biology and genetics of the cancer itself.

What is the basis for this opinion? It emanates from current understanding of the biology of cancer and the metastatic process and the study of growth rates of cancer, including primary colon cancers and their metastases, including hepatic lesions. Most studies demonstrate that the mean doubling time for primary colonic cancers are estimated to be 130 days. Thus, in this particular case, using an approximate 4 month doubling time for the primary colon cancer in the cecum, the primary colon cancer that Mr. Pernokas was diagnosed with in March 2002 represents approximately 32 doublings, and was present sub-clinically

(microscopically) approximately 10 years earlier, but only clinically diagnosable sometime in the 2001 time frame.

It is also important to point out that although there is no current evidence for the presence of metastases in the liver (or other organ) in the case of Mr. Pernokas, if a lesion were to be detected that represents a metastatic focus in the liver or other organ at some time in the future, it is my opinion that the seeding of such a lesion(s) occurred well before the 1998-2000 time frame.

The growth rate of hepatic lesions in patients with colorectal cancer has been studied using CT scans and intraoperative observation. In one study of hepatic lesions from colorectal cancer, it was estimated that if the mean doubling time for the metastases was 155 ± 34 days and that the mean age of these metastases were 3.7 ± 0.9 years. Depending upon the mathematical model (based upon serial CT scanning data), the predicted age of the lesions ranged from 2.8 years to 39.9 years using exponential growth characteristics; and 1.3 years to 11.4 years using Gompertzian growth characteristics. By the time a primary lesion (such as a colon primary cancer) is detected clinically, nearly 70-80% of its natural life has elapsed. The actual seeding of the organs with these metastatic foci emanating from the primary cancer have occurred years earlier, and have done so only if the cancer cells of the primary lesion possess the genetic attributes to invade blood vessels, exit from blood vessels, create new blood vessels, as well as a number of obligate features that allow metastases to grow and become manifest.

Finally, there was no evidence on pathology that the lesion was derived from a pre-existing polyp.

I agree with the population based statistics and associated survival rates that are cited by Dr. Browne. However, she misinterprets Mr. Pernokas's prognosis that are based upon population based statistics. Population based statistics such as those cited by Dr. Browne do not apply to individual patients. Rather they represent a compilation of disparate data, obtained over many different time periods, of patients diagnosed and treated differently. They are unable to take the characteristics of individual patients and those patients' specific cancer characteristics, such as the grade of lesion or the differentiation. Moreover, they do not consider the fact that Mr. Pernokas's tumor had the requisite genetic make up that enabled it to metastasize to regional lymph nodes. Plaintiff may argue that there could only have been microscopic disease or no cancer in the lymph nodes in 1998, 1999 or 2000. However, that is highly improbable, especially given recent scientific understanding that supports the fact that the metastatic activity of a cancer occurs very early in the development of the cancer, well before it is ever diagnosable. Staging conventions for cancer help identify appropriate treatment options and should not be misapplied to determine when cancers develop, when they metastasize or whether an earlier diagnosis would have altered outcome.

7. Do you agree/disagree with the opinions of plaintiff's expert Dr. Winickoff?

Opinions of Dr. Winickoff:

- *Dr. Paster deviated from the standard of care in 1998 by not attempting to make a definitive diagnosis of the source of lower gastrointestinal bleeding;*
- *In the case of lower GI bleeding, the standard requires either a colonoscopy initially or if an active bleeding source is not found at flexible sigmoidoscopy, a colonoscopy subsequently*
- *Had a colonoscopy been performed (?in 1998) a precancerous polyp or stage I early cancer would almost certainly have been found in the right colon; it would have been removed without a right colectomy; with a chance of cure approaching 100%; Stage III cancers have significantly less cure rate;*
- *Patient had to undergo major surgery; left with a shortened bowel that causes loose stools; and underwent debilitating chemotherapy treatments;*
- *No attempts to evaluate abdominal pain in 1999 and 2000;*
- *Had a colonoscopy been performed in early 2000, a stage I cancer would more likely than not have been found with a substantially greater chance of cure with less extensive surgery; chemotherapy would have been avoided as well*
- *Dr Winickoff expresses additional opinions about the history and review of systems relating to weight loss and states that Dr. Paster failed to carry out an adequate laboratory evaluation in a heavy drinker in June 2001, allowing the cancer to spread for another nine months, contributing to patient's diminished chance for full recovery.*

Many of the opinions of Dr. Winickoff have been covered in the discussion of Dr. Browne. However, while some early cancers can be removed endoscopically and avoid the necessity for more extended surgery when found as part of screening programs, Dr Winickoff implies that such would have been the case with Mr. Pernokas had he been operated on in 2000. I respectfully disagree with this opinion. Dr. Winickoff's opinion is that the symptoms Mr. Pernokas was experiencing in late 1999 and 2000 were due to a polyp or early stage I cancer. It is implausible and more likely that Mr. Pernokas's rectal bleeding and abdominal bloating that were experienced in 1998 and 1999 were not due to the eventual right colonic cancer diagnosed in 2002. If one applies growth characteristics of primary colon cancers as discussed above, I calculate that the cancer was sub centimeter in size and unlikely to be diagnosable at that time and even more unlikely to have accounted for either the bleeding or abdominal symptomatology.

Finally, both Dr. Browne's and Winickoff's opinions are not in agreement with my own for the following additional reasons. They assume that Mr. Pernokas,

had he been diagnosed in **2000 or before** would have had a higher rate of cure. They seem to place the occurrence of this decrease in curability statistic (based upon the occurrence of lymph node metastases) somewhere in the time period of **1999-2000**. In fact, the presence of lymph node metastases which were diagnosed occurred much earlier than this 1999 to 2000 time period, and reflects, not the time interval of 1999-2000, but rather intrinsic characteristics of the cancer. The presence of the cancer, as determined by the operative and radiographic findings in **March 2002** can only be explained by the cancer cells being present in those sites for years preceding 2002.

8. Did anything that the defendant Dr. Paster did or fail to do contribute to causing any injury or injuries to the patient?

Based upon the considerations enumerated above, there is nothing that Dr. Paster did or failed to do that contributed to the colon cancer that was diagnosed in Mr. Pernokas in March 2002 or the medical outcomes, both current and future.

9. If the patient's colon cancer had been discovered earlier, what were the available treatment options at that time, and what was the likely or expected outcome for the patient?

Assuming, for purely hypothetical reasons, the patient had a colonoscopic evaluation in **2000** and this evaluation led to the diagnosis of colon cancer in the cecal region (based upon discussions above, it is my opinion that this is not possible). The patient would have undergone a right ileo-colectomy; the hypothetical lesion would have been smaller, but it still would have possessed the same histologic characteristics as that in **March 2002**; the lymph nodes would have shown the presence of microscopic disease. The presence of the positive lymph nodes would have led to a program of adjuvant chemotherapy. My opinion is that even with this potentially more "favorable" presentation of the cancer being diagnosed at an earlier time frame would not have altered Mr. Pernokas's outcome, given the ability of his cancer to have the genetic makeup to be a metastatic (to lymph nodes) cancer. Thus, even though the primary tumor stage of the cancer would seem to be lower, this lower stage should not be interpreted to define the behaviour of the cancer. As stated above, staging conventions for cancer help identify appropriate treatment options and should not be misapplied to determine when cancers develop, when they metastasize or whether an earlier diagnosis would have altered outcome. Scientific evidence now supports the fact that the process of metastases, once thought to be a late manifestation of the biologic progression of cancer, actually occurs much earlier in the process, in the so called "preclinical" or period prior to diagnosability, and relates to the underlying genetic make up of the cancer, rather than when the cancer is actually diagnosed. Mr. Pernokas would have experienced the same medical outcome as he did when the cancer was diagnosed in March 2002.

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Finally, Mr. Pernokas is now four years and one month since diagnosis, without any apparent recurrence of his cancer. A colonoscopy in June of 2005 revealed no evidence of recurrent or new colorectal cancer. As stated above, he is still at risk for recurrent disease, but it diminishes as time passes. If a recurrence does occur, it is my opinion that "metastatic seedings" of such a recurrence would have occurred well before the 1999 time frame. Please appreciate that he is also at higher risk for developing a new primary colorectal cancer, and this would have to be considered as well if Mr. Pernokas were to develop evidence of colon cancer in the future.

Please contact me if I can provide any additional information or clarification of the contents of this opinion.

Sincerely yours,

A handwritten signature in black ink, reading "Marc B. Garnick" with a stylized flourish at the end.

Marc B. Garnick, MD
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